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10/760,367	01/21/2004	Hideyuki Kanayama	70591-016	1379

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Washington, DC 20005-3096

EXAMINER

DUNWIDDIE, MEGHAN K

ART UNIT	PAPER NUMBER
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2875

DATE MAILED: 08/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/760,367

Applicant(s)

KANAYAMA ET AL.

Examiner

Meghan K. Dunwiddie

Art Unit

2875

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 June 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) See Continuation Sheet is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 4, 7, 12, 14, 16/7, 16/14, 17/4, 17/7, 17/12, and 17/14 is/are allowed.
- 6) ☒ Claim(s) See Continuation Sheet is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Continuation of Disposition of Claims: Claims pending in the application are 1,3-5,7-15,16/3,16/5,16/7,16/10,16/11,16/14,16/15,17/1,17/3-17/5, and 17/7-17/15.

Continuation of Disposition of Claims: Claims rejected are 1,3,5,8-11,13,15,16/3,16/5,16/10,16/11,16/15,17/1,17/3,17/5,17/8-17/11,17/13, and 17/15.

DETAILED ACTION

This Office Action is a Final Rejection in response to the amendment received on June 7, 2006 by **Kanayama et al.**

Response to Arguments

1. Applicant's arguments with respect to claims 1-3, 5, 6, 8-15, 16/2, 16/5, 16/6, 16/10, 16/11, 16/14, 16/15, 17/1-17/3, 17/5, 17/6, 17/8-17/15, and 18 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 8, 10, 13, 15, 16/10, 16/15, 17/1, 17/8, 17/10, 17/13, 17/15, and 18 are rejected under 35 U.S.C. 102(e) as being anticipated by **Mukawa et al.** (US 6561654).

4. In reference to Claim 1, **Mukawa et al.** shows an illuminating device comprising:

- A white light source [Figure 1: (5)], and an auxiliary light source [Figure 1: (7)] emitting light having a wavelength component which is considered to be insufficient from the viewpoint of color reproduction in the white light source,

Art Unit: 2875

- Wherein the white light source and the auxiliary light source are arranged such that their respective optical axes cross each other [Figure 1: (5 and 7)],
- And light mixing means for mixing light from said white light source and light from said auxiliary light source and emitting the mixed lights is provided at the position where the optical axes cross each other [Figure 1: (17)],
- Wherein said auxiliary light source has a plurality of solid-state light sources emitting parallel light arranged therein [Figure 8: (7 and 57)],
- And an optical integrator for preventing the light emitted from the solid-state light sources from being introduced in a nonuniform state onto an object to be illuminated is provided on the light exit side of said light mixing means [Figure 8: (14, 58, and 59)].

5. In reference to Claim 8, **Mukawa** et al. shows:

- A white light source [Figure 1: (5)] comprising a concave reflecting element [Figure 1: (9)], a light emitting point of said white light source being located in a concave portion of the concave reflecting element [Figure 1: (5 and 9)], and an auxiliary light source emitting light [Figure 1: (7)] having a wavelength component which is considered to be insufficient from the viewpoint of color reproduction in the white light source;
- Wherein the light emitted from said auxiliary light source is condensed in the concave portion of the concave reflecting element and in the vicinity of the light emitting point of said white light source [Figure 1: (5, 7, and 9)].

Art Unit: 2875

6. In reference to Claim 10, **Mukawa** et al. shows:

- Said auxiliary light source has a plurality of solid-state light sources arranged therein [Figure 8: (7 and 57)],
- And each of the solid-state light sources has a condenser element [Figure 8: (14, 58, and 59)].

7. In reference to Claim 13, **Mukawa** et al. shows:

- A first light source emitting nearly parallel lights [Figure 8: (5)],
- An optical member having a plurality of optical elements disposed with spaces therebetween for respectively introducing the lights emitted from said first light source in a direction [Figure 8: (10A and 10B)],
- And a second group of light sources respectively arranged in the spaces, and respectively emitting nearly parallel lights in the direction [Figure 8: (7 and 57)],
- A white light source being provided as said first light source [Figure 8: (5)],
- And an auxiliary light source emitting light having a wavelength component which is considered to be insufficient from the viewpoint of color reproduction in said white light source being provided as said second group of light sources [Figure 8: (7 and 57)].

8. In reference to Claim 15, **Mukawa** et al. shows:

- Said auxiliary light source has a plurality of solid-state light sources respectively emitting nearly parallel lights arranged therein [Figure 8: (7 and 57)].

9. In reference to Claims 16/10 and 16/15, **Mukawa** et al. shows:
- There are provided as said solid-state light sources solid-state light sources respectively emitting lights having different wavelengths [See column 3 lines 21-23 and column 7 lines 27-30 in reference to Figure 8: (7 and 57)],
 - And there is provided means for driving each of the solid-state light sources to selectively emit the light [Figure 8: (55)].
10. In reference to Claims 17/1, 17/8, 17/10, 17/13, and 17/15, **Mukawa** et al. shows:
- A projection type video display apparatus that modulates light emitted from an illuminating device using a light valve and projects the modulated light [See Figure 1].
11. In reference to Claim 18, **Mukawa** et al. shows:
- A projection type video display apparatus that modulates light emitted from an illuminating device using a light valve and projects the modulated light [See Figure 1].

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 2875

13. Claims 3, 5, 16/3, 16/5, 17/3, and 17/5 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Mukawa** et al. (US 6561654) in view of **Wichner** et al. (US 6688747).

14. Regarding Claim 3, **Mukawa** et al. shows an illuminating device comprising:

- A white light source [Figure 1: (5)],
- And an auxiliary light source emitting light having a wavelength component which is considered to be insufficient from the viewpoint of color reproduction in the white light source [Figure 1: (7)],
- Wherein used as the auxiliary light source is one emitting only red light in a predetermined wavelength range [See column 3 lines 21-23 in reference to Figure 1: (7)],
- The auxiliary light source is arranged around a light emission area of said white light source [Figure 1: (7)],
- Said auxiliary light source has a plurality of solid-state light sources respectively emitting parallel lights arranged therein [Figure 8: (7 and 57)].

15. Regarding Claim 16/3, **Mukawa** et al. shows:

- There are provided as said solid-state light sources solid-state light sources respectively emitting lights having different wavelengths [See column 3 lines 21-23 and column 7 lines 27-30 in reference to Figure 8: (7 and 57)],

- And there is provided means for driving each of the solid-state light sources to selectively emit the light [Figure 8: (55)].

16. Regarding Claim 17/3, **Mukawa** et al. shows:

- A projection type video display apparatus that modulates light emitted from an illuminating device using a light valve and projects the modulated light [See Figure 1].

17. **Mukawa** et al. does not show:

- An optical integrator for preventing the lights respectively emitted from the light sources being introduced in a nonuniform state onto an object to be illuminated,
- A pair of fly's eye lenses is provided as said optical integrator,
- And each of the solid-state light sources and each of lenses composing the pair of fly's eye lenses correspond to each other.

18. **Wichner** et al. teaches:

- An optical integrator for preventing the lights respectively emitted from the light sources being introduced in a nonuniform state onto an object to be illuminated [Figure 13a: (350)],
- A pair of fly's eye lenses is provided as said optical integrator [Figure 13a: (350 and 352)],

- And each of the solid-state light sources and each of lenses composing the pair of fly's eye lenses correspond to each other [Figure 13a: (144, 350, and 352)].

19. It would have been obvious for one of ordinary skill in the art, at the time of the invention to provide the illuminating device of **Mukawa** et al. with an optical integrator and the optical integrator being a pair of fly's eye lenses as taught by **Wichner** et al. for the purpose and advantage of preventing the lights emitted from the light sources from being illuminated in a nonuniform state and redistributing the light emitted from the light sources into a uniform state.

20. Regarding Claim 5, **Mukawa** et al. shows the claimed invention as cited above, but does not specifically teach a pair of fly's eye lenses provided as the optical integrator and each of the solid-state light sources and each of the lenses composing the pair of fly's eye lenses are arranged in correspondence with each other.

21. Regarding Claim 16/5, **Mukawa** et al. shows:

- There are provided as said solid-state light sources solid-state light sources respectively emitting lights having different wavelengths [See column 3 lines 21-23 and column 7 lines 27-30 in reference to Figure 8: (7 and 57)],
- And there is provided means for driving each of the solid-state light sources to selectively emit the light [Figure 8: (55)].

Art Unit: 2875

22. Regarding Claim 17/5, **Mukawa** et al. shows:

- A projection type video display apparatus that modulates light emitted from an illuminating device using a light valve and projects the modulated light [See Figure 1].

23. **Wichner** et al. teaches:

- A pair of fly's eye lenses provided as said optical integrator [Figure 13a: (350 and 352)],
- And each of the solid-state light sources and each of lenses composing the pair of fly's eye lenses are arranged in correspondence with each other [Figure 13a: (144, 350, and 352)].

24. It would have been obvious for one of ordinary skill in the art, at the time of the invention to provide the illuminating device of **Mukawa** et al. with an optical integrator and the optical integrator being a pair of fly's eye lenses as taught by **Wichner** et al. for the purpose and advantage of preventing the lights emitted from the light sources from being illuminated in a nonuniform state and redistributing the light emitted from the light sources into a uniform state.

Art Unit: 2875

25. Claims 9, 11, 16/11, 17/9, and 17/11 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Mukawa** et al. (US 6561654) in view of **Kudo** (US 5610763).

26. Regarding Claim 9, **Mukawa** et al. shows an illuminating device comprising:

- A white light source [Figure 1: (5)], and an auxiliary light source [Figure 1: (7)] emitting light having a wavelength component which is considered to be insufficient from the viewpoint of color reproduction in the white light source,
- Wherein light emitted from said white light source is condensed at a predetermined position, and the light emitted from the auxiliary light source is also condensed at said predetermined position [Figure 1: (13 and 14)].

27. Regarding Claim 11, **Mukawa** et al. shows:

- Said auxiliary light source has a plurality of solid-state light sources arranged therein [Figure 8: (7 and 57)],
- And each of the solid-state light sources has a condenser element [Figure 8: (14 and 58)].

28. Regarding Claims 16/11, **Mukawa** et al. shows:

- There are provided as said solid-state light sources solid-state light sources respectively emitting lights having different wavelengths [See column 3 lines 21-23 and column 7 lines 27-30 in reference to Figure 8: (7 and 57)],

- And there is provided means for driving each of the solid-state light sources to selectively emit the light [Figure 8: (55)].

29. Regarding Claims 17/9 and 17/11, **Mukawa** et al. shows:

- A projection type video display apparatus that modulates light emitted from an illuminating device using a light valve and projects the modulated light [See Figure 1].

30. **Mukawa** et al. does not show:

- A light incidence surface of a rod prism which is an optical integrator is located at the predetermined position,
- And wherein the aspect ratio of the light incidence surface of the rod prism and that of a light emission surface of the rod prism are substantially the same as the aspect ratio of an object to be illuminated.

31. **Kudo** teaches:

- A light incidence surface of a rod prism which is an optical integrator is located at the predetermined position [Figure 7: (40)],
- And wherein the aspect ratio of the light incidence surface of the rod prism and that of a light emission surface of the rod prism are substantially the same as the aspect ratio of an object to be illuminated [Figure 7: (40 and R)].

Art Unit: 2875

32. It would have been obvious for one of ordinary skill in the art, at the time of the invention to provide the illuminating device of **Mukawa** et al. with a light incidence surface of a rod prism as an optical integrator located at the predetermined position as taught by **Kudo** for the purpose and advantage of concentrating the light emitted from the white light source and the auxiliary light source.

Allowable Subject Matter

33. Claim 4, 7, 12, 14, 16/7, 16/14, 17/4, 17/7, 17/12, and 17/14 are allowed.

Conclusion

34. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Meghan K. Dunwiddie whose telephone number is (571) 272-8543. The examiner can normally be reached on Monday through Friday 8 am-4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on (571) 272-2378. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MKD


Stephen Husar
Primary Examiner